[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-0457; Directorate Identifier 2015-NM-084-AD]

RIN 2120-AA64

Airworthiness Directives; BAE Systems (Operations) Limited Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2012-11-15, for all BAE Systems (Operations) Limited Model 4101 airplanes. AD 2012-11-15 currently requires a one-time detailed inspection for cracks, corrosion, and other defects of the rear face of the wing rear spar, and repair if necessary. Since we issued AD 2012-11-15, we received new reports of cracking found in the wing rear spar and technical analysis results confirmed that the crack initiation and propagation are due to fatigue, with no indication of any other crack initiation mechanism (e.g. stress corrosion). This proposed AD would require repetitive detailed inspections, and repair if necessary. We are proposing this AD to detect and correct cracking in the wing rear spar, which could propagate to a critical length, possibly affecting the structural integrity of the area and resulting in a fuel tank rupture, with consequent damage to the airplane and possible injury to its occupants.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact BAE Systems (Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; e-mail RApublications@baesystems.com; Internet http://www.baesystems.com/Businesses/RegionalAircraft/index.htm. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-0457; or in person at the Docket

Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1175; fax 425-227-1149.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2016-0457; Directorate Identifier 2015-NM-084-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On March 31, 2012, we issued AD 2012-11-15, Amendment 39-17079 (77 FR 36127, June 18, 2012). AD 2012-11-15 requires actions intended to address an unsafe condition on BAE Systems (Operations) Limited Model 4101 airplanes.

Since we issued AD 2012-11-15, Amendment 39-17079 (77 FR 36127, June 18, 2012), we received new reports of cracking found in the wing rear spar and technical analysis results confirmed that the crack initiation and propagation are due to fatigue, with no indication of any other crack initiation mechanism (e.g. stress corrosion).

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2015-0100, dated June 3, 2015 (referred to after this as the Mandatory Continuing Airworthiness Information, or "the MCAI"), to correct an unsafe condition for all BAE Systems (Operations) Limited Model 4101 airplanes. The MCAI states:

> During an investigation of a fuel leak on the rear spar of a Jetstream 4100 aeroplane, 4 cracks were found between Ribs 6 and 7 (immediately inboard of the inboard engine rib). The cracks initiated at adjacent fastener bores in the rear spar upper boom, and progressed downwards, diagonally, into the rear spar web.
>
> These cracks, if not detected and corrected, could propagate to a critical length, affecting the structural integrity of the area, possibly resulting in a fuel tank rupture with consequent damage to the aeroplane and injury to its occupants.
>
> Prompted by these findings, EASA issued [EASA] AD 2011-0096 [which corresponds to FAA AD 2012-11-15, Amendment 39-17079 (77 FR 36127, June 18, 2012)] to require a one-time [detailed] inspection [for cracks, corrosion, and other defects] of the rear face of the

> wing rear spar and the accomplishment of applicable corrective actions [i.e., repair], depending on findings. Initial analysis of the event did not lead to the conclusion that the cracking was fatigue related, therefore [EASA] AD 2011-0096 did not require repetitive inspections.
>
> Since that [EASA] AD [2011-0096] was issued, the results of the technical analysis confirmed that the cracks were due to fatigue, with no indication of any other crack initiation mechanism (e.g. stress corrosion). In addition, further similar in-service events have been reported. During investigation of those events, further metallurgical analysis indicated that the crack initiation and propagation are indeed fatigue driven and occur at the same location.
>
> To address this unsafe condition, a review of the inspection interval was undertaken based on the cracks from both aeroplanes and BAE Systems (Operations) Ltd issued Service Bulletin (SB) J41-A57-029 Revision 3 in order to reduce the inspection interval of the wing rear spar from 2,000 flight cycles (FC) to 1,600 FC.
>
> For the reasons described above, this [EASA] AD supersedes AD 2011-0096, without retaining its requirements, introduces repetitive inspections and, depending on findings, requires the accomplishments of applicable corrective action(s) [i.e., repair].

You may examine the MCAI in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-0457.

Related Service Information under 1 CFR part 51

BAE Systems (Operations) Limited has issued Alert Service Bulletin J41-A57-029, Revision 3, dated April 8, 2014. The service information describes detailed inspections for cracks, corrosion, and other defects of the rear face of the wing rear spars.

BAE Systems (Operations) Limited also has issued Subject 57-00-00, Wings General, of Chapter 57, Wings, of the Jetstream Series 4100 Structural Repair Manual,

Volume 1, Revision 32, dated October 15, 2014. The service information describes procedures for doing certain wing repairs.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination and Requirements of this Proposed AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of the same type design.

Costs of Compliance

We estimate that this proposed AD affects 15 airplanes of U.S. registry.

We also estimate that it would take up to 25 work-hours per product to comply with the basic requirements of this proposed AD. The average labor rate is $85 per work-hour. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be up to $31,875, or up to $2,125 per product.

We have received no definitive data that would enable us to provide a cost estimates for the on-condition actions (repairing cracks, corrosion, and defects) specified in this AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;

2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2012-11-15, Amendment 39-17079 (77 FR 36127, June 18, 2012), and adding the following new AD:

BAE Systems (Operations) Limited: Docket No. FAA-2016-0457; Directorate Identifier 2015-NM-084-AD.

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2012-11-15, Amendment 39-17079 (77 FR 36127, June 18, 2012).

(c) Applicability

This AD applies to BAE (Operations) Limited Model 4101 airplanes, certificated in any category, all models, and all serial numbers.

(d) Subject

Air Transport Association (ATA) of America Code 57, Wings.

(e) Reason

This AD was prompted by new reports of cracking found in the wing rear spar and technical analysis results confirmed that the crack initiation and propagation are due to fatigue, with no indication of any other crack initiation mechanism (e.g., stress corrosion). We are issuing this AD to detect and correct cracking in the wing rear spar, which could propagate to a critical length, possibly affecting the structural integrity of the area and resulting in a fuel tank rupture, with consequent damage to the airplane and possible injury to its occupants.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Repetitive Inspections and Repair

Within 30 days after the effective date of this AD, or within 1,600 flight cycles since the most recent detailed inspection was done as specified in BAE Systems Alert Service Bulletin J41-A57-029, whichever occurs later: Do a detailed inspection for

cracks, corrosion, and other defects (defects include scratches, dents, holes, damage to fastener holes, or damage to surface protection and finish) of the rear face of the wing rear spars, in accordance with the Accomplishment Instructions of BAE Systems Alert Service Bulletin J41-A57-029, Revision 3, dated April 8, 2014. Repeat the inspection thereafter at intervals not to exceed 1,600 flight cycles.

(1) If any cracking, corrosion, or other defect is found within the criteria defined in Subject 57-00-00, Wings General, of Chapter 57, Wings, of the Jetstream Series 4100 Structural Repair Manual, Volume 1, Revision 32, dated October 15, 2014: Before further flight, repair the affected area, in accordance with the repair instructions of Subject 57-00-00, Wings General, of Chapter 57, Wings, of the Jetstream Series 4100 Structural Repair Manual, Volume 1, Revision 32, dated October 15, 2014.

(2) If any cracking, corrosion, or other defect is found exceeding the criteria defined in Subject 57-00-00, Wings General, of Chapter 57, Wings, of the Jetstream Series 4100 Structural Repair Manual, Volume 1, Revision 32, dated October 15, 2014: Before further flight, repair using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or BAE Systems (Operations) Limited's EASA Design Organization Approval (DOA).

(h) Repair Does Not Constitute Terminating Action Except for Certain Repairs

Accomplishment of a repair as required by paragraphs (g)(1) and (g)(2) of this AD, does not constitute terminating action for the repetitive inspections required by paragraph (g) of this AD, unless the approved repair required by paragraph (g)(2) of this

AD states otherwise (e.g., the approved repair states the repair terminates the inspections for the repaired area only).

(i) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Todd Thompson, Aerospace Engineer, International Branch, ANM-116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1175; fax 425-227-1149. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD.

(2) Contacting the Manufacturer: As of the effective date of this AD, for any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM-116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or BAE Systems (Operations) Limited's EASA Design Organization

Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(j) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2015-0100, dated June 3, 2015, for related information. This MCAI may be found in the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2016-0457.

(2) For service information identified in this AD, contact BAE Systems (Operations) Limited, Customer Information Department, Prestwick International Airport, Ayrshire, KA9 2RW, Scotland, United Kingdom; telephone +44 1292 675207; fax +44 1292 675704; e-mail RApublications@baesystems.com; Internet http://www.baesystems.com/Businesses/RegionalAircraft/index.htm. You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on January 13, 2016.

Michael Kaszycki,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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